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states:(71) Applicant: **AGENCY OF IND SCIENCE &  
TECHNOL  
KARUSHIIDE:KK**(72) Inventor: **KIMURA KUNIO  
ISHIBASHI OSAMU  
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OKADA HIROMI**

(74) Representative:

**(54) PRODUCTION OF  
HOLLOW GLASS  
MICROSPHERE**

(57) Abstract:

**PURPOSE:** To efficiently obtain a high-strength hollow microsphere excellent in whiteness degree by sedimenting and separating a powdery or a granular substance of a volcanic glassy deposit in a liquid medium, collecting a fraction having a prescribed particle size, baking and expanding the collected fraction.

**CONSTITUTION:** This method for producing a hollow glass microsphere is to charge a powdery or a granular substance of a volcanic glassy deposit [e.g. SHIRASU (pumiceous sand), obsidian, perlite, pitchstone, rhyolite, KAISEKI (a kind of welded pyroclastic rock, especially a welded pyroclastic flow deposit present in calderas on Mount ASO, etc., in KYUSHU District, Japan),

FUKUSHIMA HAKUDO (a clay produced in FUKUSHIMA Prefecture, Japan) or MATSUMAE HAKUDO (a clay produced in MATSUMAE District in HOKKAIDO, Japan)] into an aqueous solution containing an alkali metallic salt of an inorganic acid selected from silicic acid or phosphoric acid or a condensed acid thereof (e.g. water glass, sodium hexametaphosphate or sodium pyrophosphate) at 0.05-0.5wt.% concentration, sediment and separate the powdery or granular substance, separate and collect a fraction having 5-10µm particle diameter, then add a 0.3-3N aqueous solution of hydrochloric acid in a volume of 1-1.5ml/g to the fraction, hydrothermally treat the resultant mixture at 150-200°C temperature under 0.5-1.5MPa steam pressure for at least 8hr, subsequently bake and expand the hydrothermally treated mixture at 900-1100°C temperature for 1-60sec. The resultant hollow microsphere is recovered from the baked product by fractionation using a difference in specific gravity.

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**Title:** JP7315869A2: PRODUCTION OF HOLLOW GLASS MICROSPHERE

**Derwent Title:** Mfr. of fine hollow glass spherical filler for light wt. composite - from aq. dispersion of volcanic glass deposit in aq. soln. contg. water glass, sodium hexa:meta:phosphate or sodium pyrophosphate [[Derwent Record](#)]

**Country:** JP Japan  
**Kind:** A (See also: [JP2534831B2](#) )

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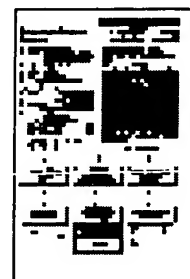
**IPC Code:** [C03C 11/00](#); [C04B 14/16](#);

**ECLA Code:** C03C11/00B;

**Priority Number:** 1994-05-20 JP1994000107083

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